

### **REMARKS/ARGUMENTS**

In the office action dated Dec 05 2007, the Examiner has rejected Claims 1, 2, 5, 6, 8, 9, 13, 15, 20, 21 and 22 under 35 USC 102(b) as being anticipated by International publication WO 02/02460 to Deckman et al. (hereinafter Deckman). The Examiner has rejected claims 3, 4, 7, 10, 11, 16, 17, 18 and 19 under 35 USC 103(a) as being unpatentable over WO 02/02460 to Deckman as applied to claim 1 of the application, and further in view of US Patent 4,622,275 to Noguchi et al. The Dec 05 2007 Office Action has been carefully considered. After such consideration, Claims 8 has been cancelled. Applicant respectfully requests reconsideration of the application by the Examiner in light of the above amendment and the following remarks offered in response to the Dec 05 Office Action.

#### **Rejections under 35 U. S. C 102 (b)**

Claims 1, 2, 5, 6, 8, 9, 13, 15, 20, 21 and 22 have been rejected as being anticipated by International publication WO 02/02460 to Deckman. Applicant respectfully traverses the rejection.

Deckman does not disclose all elements of claims 1, 15, 20, and 22 for the following reasons:

1) The system disclosed by Deckman (as shown in Fig.2) uses hydrogen produced in the reforming reaction and the water gas shift reaction permeates membrane 4 to the combustion side 3 of the reactor. The hydrogen is combusted; its combustion energy released into combustion product 9, which is directed to turbine expander 204. (page 12, 2<sup>nd</sup> paragraph – page 13, 1<sup>st</sup> paragraph).

In contrast, the present application discloses a reformer that produces hydrogen, where the combustor does not use the hydrogen as fuel (as indicated by the solid arrow 14 in figures 1, 2, 3, 4 and 5).

2) The system disclosed by Deckman shows a heat exchanged membrane reactor that employs thermal or catalytic steam reforming of a hydrocarbon feed to produce hydrogen,

which permeates the reactor membrane to the opposite side, where it is combusted. A portion of the heat of combustion is transmitted through the membrane to supply heat to the reforming reaction, a highly endothermic reaction. The combustion product is used to power a turbine for generating electricity (Page 2, 2<sup>nd</sup> paragraph).

In contrast the system disclosed in the present application produces hydrogen and electricity.

For the reasons discussed above, Applicant submits that claims 1, 15, 20 and 22 are allowable over Deckman. Claims 2, 5, 6, 9, 13, 21 depend directly or indirectly from claim 1, 15, 20 or 22. Applicant respectfully submits that Claims 2, 5, 6, 9, 13, 21 are similarly allowable for the reasons discussed above.

#### **Rejections under 35 U. S. C 103 (a)**

The Examiner has rejected Claims 3, 4, 7, 10, 11, 16, 17, 18 and 19 have been rejected as being unpatentable over Deckman as applied to claim 1 of the application, and further in view of US Patent 4,622,275 to Noguchi et al. Applicant respectfully traverses the rejection.

Applicant respectfully submits that according to the discussion above Claim 1 and Claim 15 are in condition for allowance.

Claims 3, 4, 7, 10, 11, 16, 17, 18 and 19 directly or indirectly depend from claim 1 and/or 15. Therefore Applicant respectfully submits that Claims 3, 4, 7, 10, 11, 16, 17, 18 and 19 are similarly allowable for the reasons discussed above.

The Examiner has rejected Claim 12 as being unpatentable over Deckman as applied to claim 1 of the application, and further in view of US Patent Application Publication 2004/0031388 A1 to Hsu. Applicant respectfully traverses the rejection.

Applicant respectfully submits that according to the discussion above claim 1 is in condition for allowance. Claim 12 is directly depend from claim 1. Therefore Applicant respectfully submits that Claim 12 is similarly allowable for the reasons discussed above.

The Examiner has rejected Claim 14 as being unpatentable over Deckman as applied to claim 1 of the application, and further in view of US Patent 5,938,800 to Verrill. Applicant

respectfully traverses the rejection.

Applicant respectfully submits that according to the discussion above claim 1 is in condition for allowance. Claim 14 is directly dependent from claim 1. Therefore Applicant respectfully submits that Claim 14 is similarly allowable for the reasons discussed above.

Accordingly, Applicant respectfully submits that the claimed invention defines allowable subject matter over the applied art. Withdrawal of the rejections is respectfully requested, and allowance of the claims is respectfully solicited.

Summary

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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